Clusters of Census Tracts with High Proportions of Men with Distant-Stage Prostate Cancer Incidence in New Jersey, 1995 to 1999

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Background: Although the etiology of prostate cancer is uncertain, cancer control programs need to know the factors that contribute to variations in prostate cancer incidence from place to place. Geographic patterns of prostate cancer cases diagnosed at the distant stage are particularly important, because survival is substantially lower than for prostate cancer diagnosed at earlier stages. The purpose of this study was to identify and characterize clusters of census tracts in New Jersey with significantly high proportions of men diagnosed with distant-stage prostate cancer.
Methods: Prostate cancer cases diagnosed in New Jersey residents from 1995 to 1999 (*n* _30,505) were geocoded at the census tract level (*n* _1938) based on their residences at time of diagnosis. A spatial scan statistic (SaTScan) then was applied to identify clusters of census tracts with elevated proportions of cases of distant stage prostate cancer, using a case– control Bernoulli probability model study design. Distant-stage prostate cancers were defined as cases (*n* _1230), and all other prostate cancers as controls. Population characteristics from the 1990 Census for the area of the most likely cluster were compared to the remainder of the state.
Results: SaTScan identified a large geographic area in northeast New Jersey as the most likely cluster (RR_1.25, *p* _0.001). Compared to the remainder of the state, the underlying population in the most likely cluster area had higher proportions of African-American, Hispanic, and Asian men, and was more likely to be foreign-born, undereducated, in poverty, and have limited English speaking ability.
Conclusions: Spatial analyses of late stage prostate cancer cases can provide additional insights into less favorable outcomes for disadvantaged populations and racial and ethnic minorities.

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